

Mentoring: Opening Doors

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First Annual ECE Dinner for Graduating Women

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Mentoring?

- Mentoring has become a "buzz" word in higher education - what is it?
- Mostly to promote the advancement of women and minorities, especially in S & E. Why do only women and minorities need mentoring?
- What women should be mentored?
- What can do you do for mentoring?
 - person
 - department

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What is a mentoring?

- Mentoring is establishing very special relationship
 - personal as well as professional
 - care about the personal development as well as professional
 - develops and lasts over an extended period of time
 - provides help, advice, contacts, and information
 - provides encouragement
- Research advisor may or may not be a mentor

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Why only women and minorities?

- Recently, study looked at how faculty envision and practice mentoring among themselves
 - Result: When faculty mentoring occurs, it is mutually negotiated, primarily between persons of the same sex and between assistant and full professors
 - In S & E, white males are being mentored - informal
- To mentor women or senior faculty, must have structure mentoring

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Lots of studies about importance of mentoring for success

- Members of Association of Women in Science asked about their major concerns
- First - effective mentoring systems are needed to support women throughout their careers
- Researchers have identified this as the most crucial need for recruitment and advancement of women in S & E

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Mentoring: Open Doors

- Encouraging and motivating
- Demanding unqualified excellence
- Mutual respect and trust
- Doors
 - Opportunities - what are the possibilities
 - Abilities and talents
 - Resources and networking - needed for success

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Status of Women in CS & E

- Statistics from 1998-1999 Taubee Survey (CRN March 2000)
 - (from Ph.D. degree granting institutions)
- B.S. degree: 17%
- *But % dropping for B.S. degrees*
- 34% in 1984 - about 29% drop
- *CS only science in which this is true*

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Status of Women - cont.

- Pipeline shrinks at all levels
- Girls represent 17% of Computer Science AP test takers
- Women are about 20% of IT professionals

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Advanced degrees (1998-1999)

- Master's Degrees: 26% for women
- Ph.D. degrees: 15% (increase from 11% in 1990)
- Women Faculty:
 - 16% are assistant professors
 - 12% are associate professors
 - 8% are full professors

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Mentoring at all levels

- Students
 - Undergraduate
 - Graduate students
 - Faculty
 - Assistant
 - Associate
 - Full
 - Industry
- Can be both mentor and mentee

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Mentoring of women students

- Identify students with potential and encourage them to pursue degrees in CS & E
- Set high standards and challenges for the students
- Help the woman student achieve some success and recognize that it is success -
 - success is great catalyst for encouraging student continue and reach their potential
- Provide a sense of community so woman student does not feel isolated
- Help with networking

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Mentoring Faculty Women in CS & E

- Women underrepresented in faculty CS & E
- Underrepresentation is worse as go up the ranks
- Disturbing
 - need women role models and mentors to encourage women students in careers in CS & E
- Importance of mentoring recognized at junior level
 - No/little mentoring occurs for associate and full professor
 - NSF ADVANCE program

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Mentoring faculty

- Assistant Professor
 - tenure
 - setting up research lab
 - networking - conferences, funding agencies
- Associate Professor
 - Visibility
 - professional activities & program/conference chairs
- Professor
 - Leadership
 - honors, leadership positions
 - networking

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Mentoring in industry

- Mentoring programs
- What it takes to get to next level
 - management
 - technical
- Not necessarily one mentor

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How to be a mentor

- Faculty member for students
 - approach good students and encourage them
 - show interest in student
- Students for students
- Faculty to faculty
 - offer help
 - include faculty member in research meetings, lunch
- Think about mentoring - what is a good mentor
- Articles

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How to find a mentor

- Role model
 - talk to them - ask questions
 - internal
 - external - in your field
- Trusted colleague - builds over time

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What should a department do?

- Institutionalize mentoring programs
- **Mentoring at student level and faculty**
 - Mentors can be students & faculty
- **Also good to have woman mentor, but maybe not primary mentor**
- **Mentor training**
 - workshops
 - literature - "Adviser, Teacher, Role Model, Friend - On being a mentor to students in S & E"
 - National Academy of Sciences, National Academy of Engineering, Institute of Medic,

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Why be a mentor?

- One of the most rewarding activities
 - helping shape the professional and personal life of someone
- What we need to do to increase the participation of women in CS & E
- Open doors for others

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